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Geometry and Statistics
Spirit Lake
GKN Wheels-Estherville

Part I: Overview of Business

- GKN is a multi-national company that manufactures rims, disks, and wheels for agriculture, cars, and other vehicles.
- The company is based in the United Kingdom, but has plants locally in Iowa in Estherville and Armstrong.

Part II: Job Specifics

- The problem resides in the quality assurance program, making sure that all parts are to specifications and that operations can be replicated
- Ensuring the parts being manufactured are exactly what the customer asked for is the goal of the operation

Part III: Introduce the Problem

Ensuring the wheel meets specifications is the foremost issue the Quality Assurance program has. Using your Geometry knowledge, what things would you measure to ensure the manufactured wheel is exactly the same as the print.

Part IV: Background

- Properties of circles
- Properties of line segments, planes, and rays
- Calibrations and accuracy of measurements
- Graphing in 3-Dimensions
- Use of the Rover Arm to measure distances in space

Part V: Business Solution

- GKN has a variety of measurements that the Rover arm conducts to ensure the part is to specifications. Being able to identify measuring locations, reading graphs, and using tools all aid in ensuring quality

Part VI: Student Solutions

- I think students will use some of the tools listed, and find some of the areas to use them. I think they will depend too much on technology and will miss some of the more straight forward answers to ensuring they meet specifications